

ATIVE SERIES-1

MALARIA

IN THE SOUTH-EAST ASIA REGION



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50 YEARS: COMMEMORATIVE SERIES-1

MALARIA

IN THE SOUTH-EAST ASIA REGION



WORLD HEALTH ORGANIZATION

HEALTH FOR ALL- ALL FOR HEALTH

Regional Office for South-East Asia

New Delhi

1997

Message



Malaria continues to be one of the biggest killers, accounting for the deaths of an estimated one million children and adults annually, and afflicting around 300 million persons around the world. Caused by a parasite and spread by the mosquito, it has, for decades challenged the health sector's endeavours to eradicate or control it. Just four decades ago, it seemed that malaria could be controlled mainly through the use of insecticides. But time proved otherwise. When control measures could not be adequately sustained, malaria re-emerged as a major health challenge in the seventies. The problem is acute, particularly in countries with a tropical or subtropical climate. All countries in the WHO South-East Asia Region, except DPR Korea and Maldives, face a threat from re-emerging malaria and the growing incidence of drug resistant strains.

While malaria mortality is a cause for grave concern, equally great is the problem of malaria morbidity. It debilitates communities and affects productivity. The situation allows no room for complacency. What is needed is stronger political will and commitment to embark on comprehensive control measures against this major public health menace. Unless this is done, malaria will continue to exact a high toll in the years to come. Sectors other than health, together with the media, organized groups, communities, families and individuals have a critical role to play in this effort.

As we approach a new millennium, WHO reaffirms its commitment to support countries and communities with the technology and the means to address this challenge. What we need to strengthen is partnerships. For malaria is no longer the concern of governments or the health community alone - it is everyone's concern requiring a multi-sectoral effort. Resources through partnerships need to be tapped and mobilized if effective malaria control is to be achieved.

This information kit outlines the extent of the problem and the strategies to deal with it. It is hoped that the publication will help strengthen our efforts at all levels to effectively control malaria in the Region.

Dr Uton Muchtar Rafei
Regional Director

PREVENT MALARIA

PROTECT YOUR FAMILY. HELP THE COMMUNITY

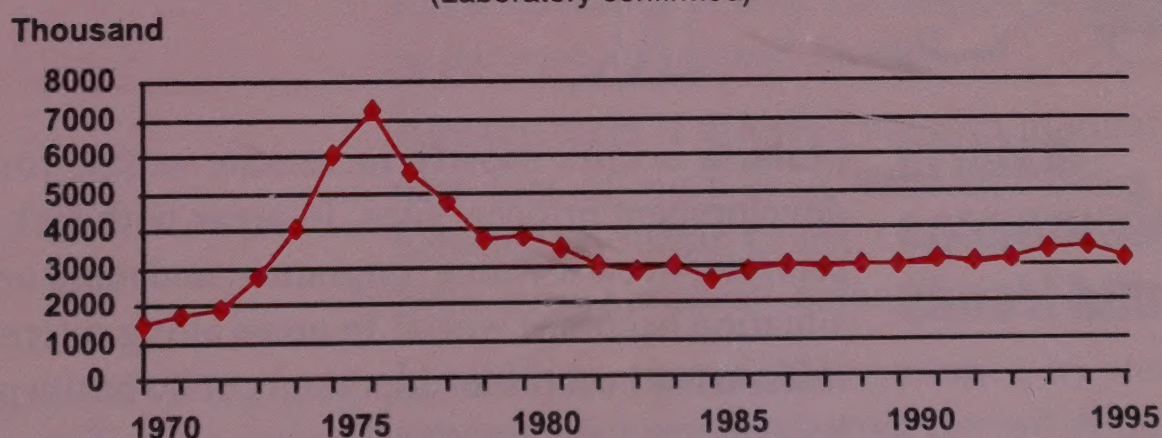
A major public health problem

Malaria is one of the most serious diseases of developing countries. Though curable and preventable, it still kills several thousands of people. This is because many people generally do not know enough about how malaria is caused and spread, or how it can be prevented. While others do not come forward for treatment in time; still others do not have access to proper health-care services.

It is estimated that 1.2 billion people out of the 1.4 billion population of the South-East Asia Region, live in malarious areas. Of the ten countries in the Region, only DPR Korea and Maldives are free from indigenous cases of malaria.

In 1995, malaria cases in the Region were estimated at 21.9 million, with almost 32,000 deaths. Outside of Africa, two-thirds of all reported cases are concentrated in just six countries, of which two - India and Sri Lanka - are in the South-East Asia Region. India accounted for more than 85% of the cases in the Region in the same year.

Trend of Malaria cases in WHO South-East Asia Region
(Laboratory confirmed)

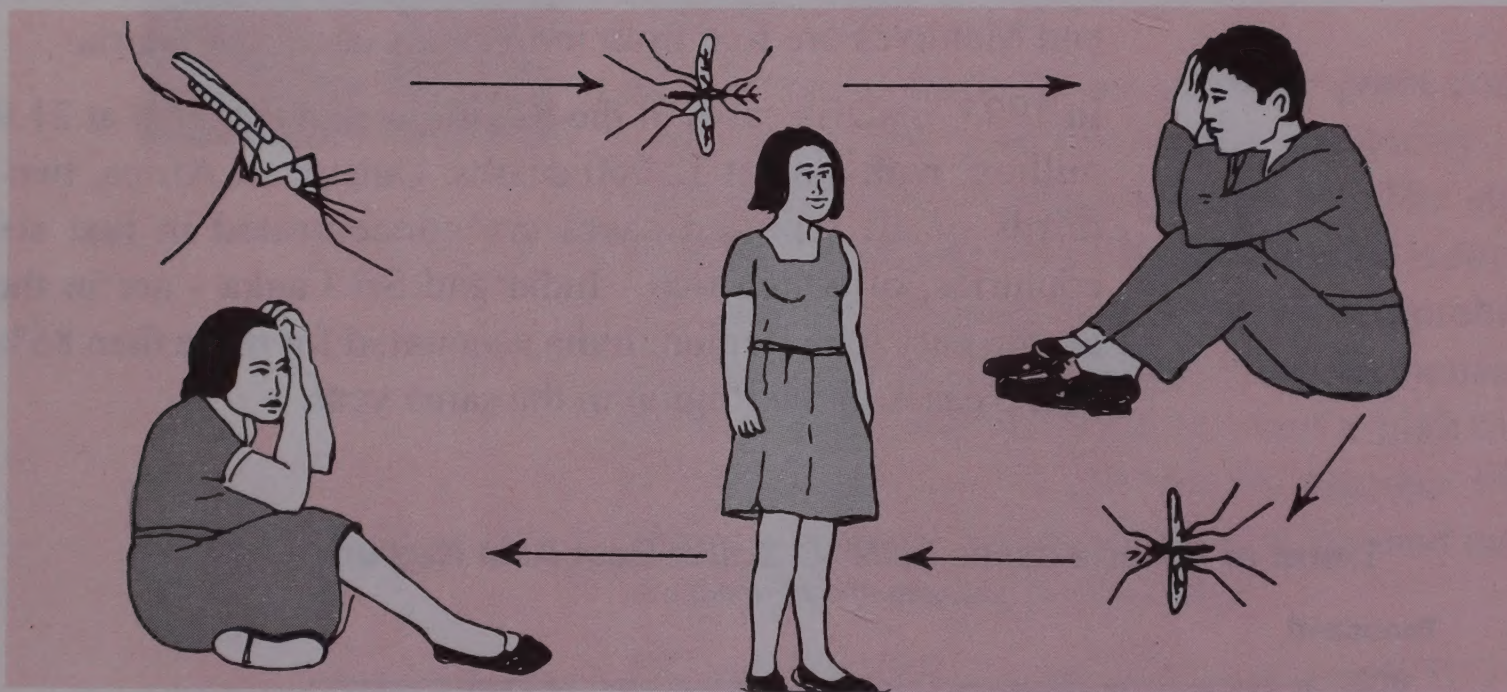


Malaria - the cause

Malaria is a tropical parasitic disease caused by four species of protozoal parasites of the genus *Plasmodium*. Of these *P. falciparum* accounts for most of the infections in Africa and for one-third of the infections in the rest of the world. *Falciparum* malaria is the most dangerous form of the disease which, at times, can lead to cerebral malaria, coma and death.

Malaria - transmission

- The Malaria parasite is transmitted by the female Anopheles mosquito. The malaria parasites enter the body through mosquito bites.
- When a mosquito bites a person, it sucks up blood. If the person has malaria, some of the malaria parasites in the blood are also sucked into the mosquito.
- The malaria parasites multiply and develop in the mosquito. After 10 - 14 days they are mature and ready to be passed on to a human being.
- If the mosquito now bites a healthy person, the malaria parasites enter the body of the healthy person. This person then becomes ill and can even die if diagnosis and treatment are delayed.



Malaria occurences and trends

Malaria occurs mostly in remote areas, forests, hills and development projects sites. In areas with lack of basic health services, overcrowding, migration, and rapid urbanization, this situation becomes worse. In areas along international borders malaria has become an important public health problem. Lately, however, malaria has also become a significant health problem in many cities in India.

Forty years ago, there were hopes that malaria would be eradicated in a fairly short time, mainly through the intensive use of insecticides. In the late fifties and sixties, the DDT-based malaria eradication programme achieved dramatic success. In eight countries of the South-East Asia Region (SEAR), the number of cases fell sharply from over 110 million before the campaign to as low as 228,000 in 1965.

Re-emerging malaria

After a decline in incidence during the malaria eradication era of the 1950s and 1960s, malaria started reappearing in epidemic proportions in the mid-seventies and reached a peak of 7.2 million cases in 1976.

The overall malaria situation has remained the same for over a decade. In 1995, however, though 3.4 million cases were reported, the actual number was estimated to be six times higher. An alarming feature of the malaria situation in the region is the increase in the proportion of *P. falciparum* cases.

The emergence of drug-resistant malaria in SEAR

Country	Year of first report
Thailand	1961
Bangladesh	1970
Nepal	1972
Indonesia	1973
India	1973
Myanmar	1978
Sri Lanka	1984
Bhutan	1987

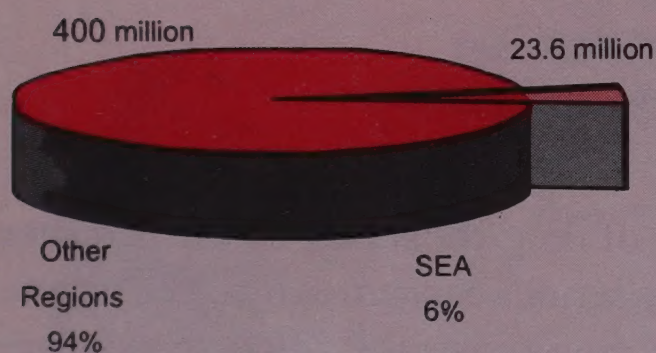
Contributing factors

- The development of drug-resistance by the parasites and its spread is posing serious concern to many countries. The rising incidence of drug-resistant *P. falciparum* is expected to increase and spread further.
- Already there is growing concern in many countries with new foci of multi-drug resistance being found in areas between Myanmar, China, Laos and Thailand. It has shifted from areas between Cambodia and Thailand in the east.
- In addition, insecticide-resistance by the mosquitoes is another problem hampering control programmes.
- Human factors contribute largely to the malaria problems in the Region. The expansion of areas under human habitation, particularly the encroachment upon tropical forests, has brought millions of people with little or no immunity to malaria, in close proximity to mosquitoes that carry malaria and other vector-borne diseases.

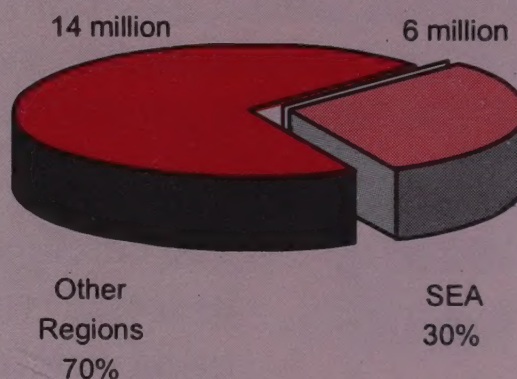
- Migrant populations engaged in forest-related occupations, with scarcely any access to essential drugs, have become important conveyors of drug-resistant malaria.
- The effect of climatic changes may give malaria vectors an opportunity to breed in new geographical areas and cause widespread epidemics.
- Political commitment in many countries is not reflected in adequate allocation of resources. This leads to institutional deficiencies and weak programme management due to lack of capacity building and research support.

Global burden of drug-resistant malaria relative to SEAR

Estimated number of clinical malaria cases, 1995



Estimated number of antimalarial drug resistance, 1995



Other factors include:

- Radical changes in the ecology and land-use patterns caused by exploitation of natural resources.
- Highly efficient vectors, multiple-vector transmission and prolonged transmission seasons due to climatic changes, usually resulting in epidemics.
- Lack of commitment for sustainable intersectoral partnerships and community involvement in malaria control.

Malaria situation: South-East Asia Region

The malaria eradication strategy in the 1950s and 1960s, with its vertical-programme approach, relied heavily on insecticides, spraying and the use of the drug chloroquine. It could not be sustained after external support was withdrawn. The countries then quickly adopted a control strategy which promoted decentralization through integration of the malaria programmes into the general health services.

With the new control strategy, however, malaria control programmes had to compete for scarce resources with other priority programmes. In most countries, the programmes had to be scaled down, resulting in increased malaria incidence during the seventies which reached a plateau in the eighties and nineties.

Bangladesh

Population at risk: 103.71 million

Case load: 1989 - 50,733
1992 - 115,660
1994 - 166,564 (epidemic)
1996 - 100,783 (provisional)

Bhutan

Population at risk: About 0.37 million

Case load: 1992 - 28,900
1994 - 38,901
1996 - 15,696

India

Population at risk: 859.66 million

Case load: 1961 - 50,000
1971 - 1,300,000
1976 - 6,460,000 (epidemic)
1996 - 2,850,000 (provisional)

Indonesia

Population at risk: 93.50 million

Case load: 1991 - a reduced incidence of 1.4% (Java-Bali).
1995 - 6,332 (provisional, Java-Bali).
1995 - 101,159 (provisional, Outer Islands).

Myanmar

Population at risk: 42.00 million

Case load: 1989 - 135,194
1995 - 100,448 ~~million~~
1996 - 58,700 ~~million~~ (provisional)

Nepal Population at risk: About 13.45 million

Case load: 1987 - 1992 In this period the case load varied from 22,000 to 29,000 annually.

1993 - 16,380

1994 - 9,467

1996 - 6,628

Sri Lanka Population at risk: 10.33 million

Case load: 1991 - 400,263

1992 - 391,279

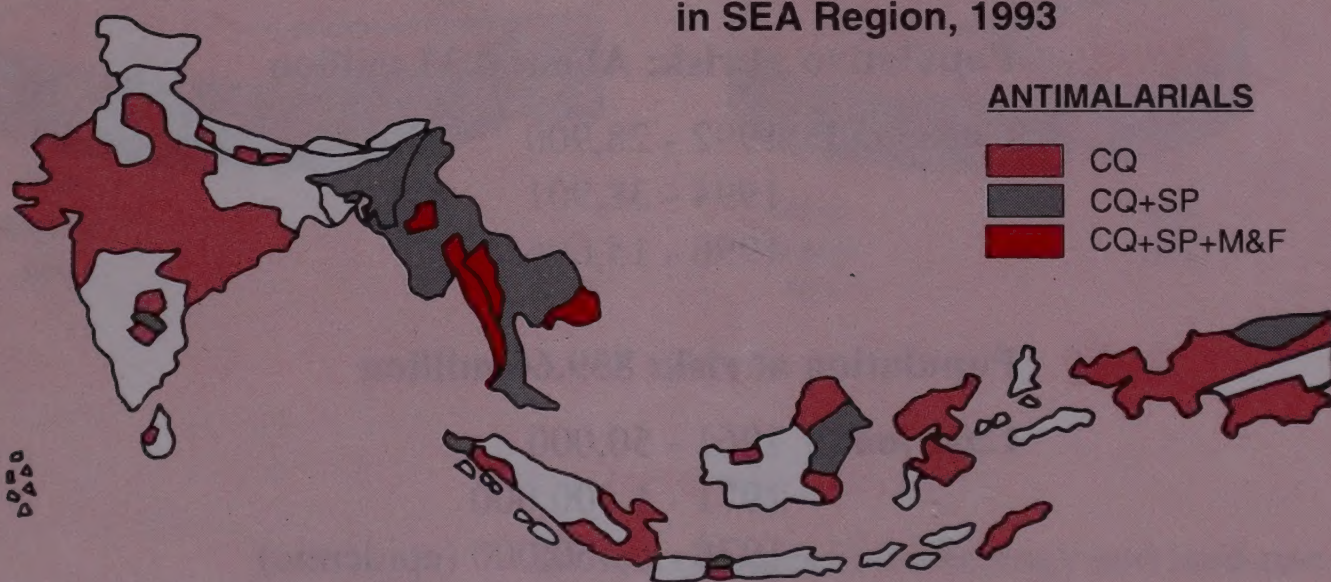
1995 - 142,294 (provisional)

Thailand Population at risk: 40.72 million

Case load: 1993-1995 - 80,000 (annually)

1996 - 87,622 (provisional)

**Distribution of Pf Resistance to Antimalarials
in SEA Region, 1993**



Strategy for combatting malaria

A new strategy was endorsed by the Ministerial Conference in Amsterdam in 1992 based on the recognition that malaria varied from country to country, area to area and even within different population groups.

The strategy is outlined in the World Declaration on the Control of Malaria. This declaration was made by the Ministerial Conference to urge commitment to malaria control by all governments, health and development workers, and the world community.

All endemic countries in the South-East Asia Region adopted the global strategy in 1995.

The objectives of the global malaria control strategy are to prevent deaths, reduce morbidity and bring about a decrease in social and economic loss. This is to be achieved by:

- providing early diagnosis and prompt treatment;
- planning and implementing selective and sustainable preventive measures;
- rapid detection and containment of epidemics; and
- strengthening of local capacities along with continuous reassessment of the local situation.

All endemic countries of the Region have adopted the new strategy. The plans to control border malaria have been developed jointly by Bangladesh, Bhutan, India, Myanmar, Nepal and Thailand.

WHO's contributions and response

WHO works with countries to focus action on achieving the objectives of the global malaria control programme as stated in the World Declaration on Control of Malaria. These include:

At the country level:

- Supporting critical reviews of malaria control activities within the health sector and in overall national development and by focussing on high-risk groups.
- Promoting carefully planned and managed decentralization and integration of malaria control, from policy making to field implementation, under an effective national malaria control programme.
- Carrying out effective surveillance with an early warning system and epidemic preparedness as part of the quality assurance of programme management
- Improving programme performance through planned training and infrastructure development.
- Sustaining political commitment by providing core budgets, promoting intersectoral partnerships and community participation.

- Promoting a broad-based consensus leading to a national policy on intersectoral partnership for a sustainable malaria control.
- Securing commitment between health sector and health related sectors including those implementing development projects with malaria consequences.

At the regional level:

WHO provides direct support to countries:

- To develop strategy and operational plans for managing decentralized malaria control programmes.
- To strengthen the capacity to plan and implement at the central, intermediate and peripheral levels, besides creating an effective link between national policy-makers and field staff.
- To develop reporting tools to suit the epidemiological conditions and staff capacity.
- To prepare information systems that are sensitive, reliable and timely for programme monitoring and to serve as an early warning system.
- To identify epidemic-prone areas and develop sustainable operational plans for epidemic preparedness and control.
- To develop policy guidelines for mobilizing internal resources through intersectoral partnerships that include the private sector.
- To support countries in developing Information, Education and Communication (IEC) strategies for malaria control using appropriate tools, including traditional media, to reach specific target communities/groups.

Other support from the Regional Office:

- Help mobilize resources to support epidemic preparedness and control.
- Support regional malaria training centres.
- Contribute to regional collaborative programmes in the control of border malaria and multi-drug resistant malaria.

- Support regional collaborating centres for further research in malaria control.

The following are some specific examples:

India

- Preclinical development on the antimalarial candidate compounds.
- Research and training in integrated methods of vector control.

Thailand

- Biological characterization of malaria parasites.

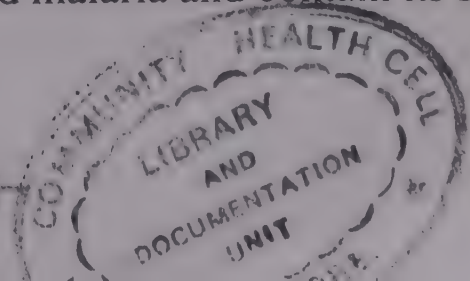
The role of the community and the individual

While governments and NGOs can do a lot to control malaria, other sectors, such as the media, organised groups, communities and individuals, can play a more critical role in addressing the problem:

- Governments must combat malaria through effective strategies and programmes. They must mount vast IEC campaigns to educate people about malaria, its spread and control. They can spray insecticides; and they can control mosquito breeding by reclaiming land and filling drains. They can anticipate and be prepared for epidemics.
- NGOs can support governments in all of the above activities by disseminating information, and exercising vigilance to ensure that all precautions are taken.
- Media can play its part by highlighting the dangers of malaria and the simple means to prevent it.
- Communities and individuals can make sure they keep their surroundings safe by eliminating breeding grounds and stagnant water. They can keep their families safe by understanding how malaria is spread. They can help by recognizing the signs and symptoms and facilitating early diagnosis and treatment. They can adopt the simple practices within their reach to avoid malaria and contain its spread.

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How to prevent malaria

There are three main ways to prevent malaria:

1. Prevent mosquitoes from biting people:

- sleep under mosquito nets (ordinary or insecticide-treated);
- screen all windows and doors in the house or, at least, in rooms where people sleep;
- apply mosquito repellents to the skin; and
- use mosquito coils.

2. Control mosquito breeding:

- eliminate places where mosquitoes can lay eggs;
- reclaim land by filling and draining;
- introduce special fish that eat mosquito larvae; and
- put special insecticides in the water to kill mosquito larvae.



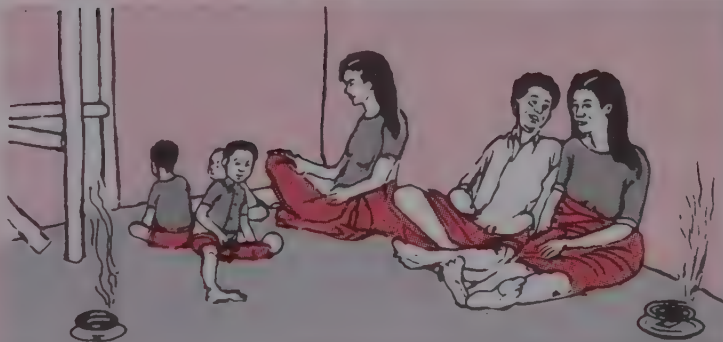
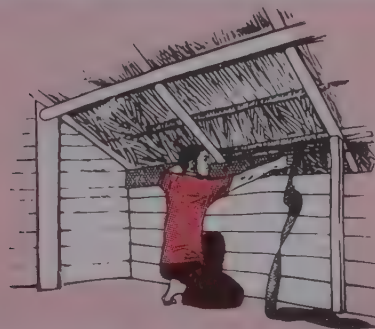
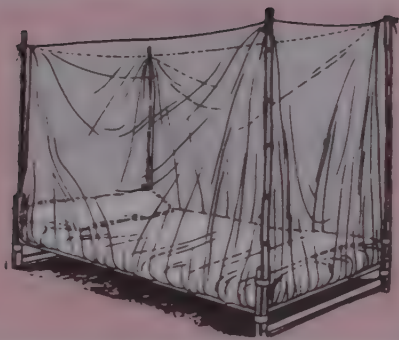
3. Kill adult mosquitoes

- spray rooms with insecticides before going to bed; and
- participate in activities carried out by the health services, such as spraying the inside walls of houses with insecticides that kill mosquitoes.

Preventing mosquito bite

Mosquito nets: A mosquito net provides good protection from mosquito bites. Malaria-transmitting mosquitoes usually bite from sunset to sunrise, so a mosquito net can prevent children and adults from mosquito bites while they sleep. Mosquito nets treated with a special insecticide provide better protection. Make sure that mosquito nets are used correctly, and are in good condition.

Screening: A mosquito net only provides protection to those while sleeping under it. But screening a whole house can protect everyone living in it, because screening can prevent mosquitoes from entering the house. All windows and doors must be screened. All screens must be properly maintained to ensure that mosquitoes cannot enter.



Repellents: Repellents are chemicals that are applied to the skin to keep mosquitoes away. They are readily available at chemists' and pharmacies' in all countries. They are effective when people are not using mosquito nets or are outside the house.

Mosquito coils: The smoke from mosquito coils keeps mosquitoes away, and may even kill them. They are useful when sitting outdoors, or in rooms that do not have screens.

Where mosquitoes breed

Malaria mosquitoes may breed in

- fresh or brackish (slightly salty) water, especially if it is stagnant or slow-flowing;
- open streams with very slow-flowing water along their banks;
- pools of water left after the rains or as a result of poor water management;
- swamps, rice fields, and reservoirs;
- small ponds, pools, borrow-pits, canals, and ditches with stagnant water, in and around villages;
- animal hoof-prints filled with water;
- cisterns (water tanks) for storage of water, and
- anything that may collect water - plant pots, old car tyres, etc.

Mosquitoes usually "operate" within a 2-kilometre radius.

How to control mosquito breeding

Communities and individuals can reduce mosquito breeding by

- using sand to fill in pools, ponds, borrow-pits, etc.;
- removing discarded containers that might collect water;
- covering cisterns (water tanks) with mosquito nets or lids;
- clearing away vegetation and other matter from the banks of streams so that water flows speedily;
- repairing leaks, preventing spillage of water, improving drainage.

If, in spite of all preventive measures, someone gets malaria it is important to know the symptoms so that timely medical advice and treatment can be sought.

How to recognize malaria

Symptoms of malaria

- One of the first symptoms is fever accompanied with chill, rigor and followed by sweating. These symptoms recur at regular intervals (daily, 48 or 72 hours).
- If the person has had these symptoms, then it could be malaria. See the doctor or the health worker as soon as possible.

The danger signs of severe malaria are:

- changes in behaviour (convulsions; unconsciousness; drowsiness; confusion; inability to walk, sit, speak or recognize relatives);
- repeated vomiting, inability to retain oral medication, inability to eat or drink;
- passage of small quantities of urine or no urine, or passage of dark urine;
- severe diarrhoea;
- unexplained heavy bleeding from nose, gums or other sites;
- high fever (above 39° C);
- severe dehydration (loose skin and sunken eyes);
- anaemia; and
- the whites of the eyes turning yellow.

When someone has malaria

If someone has ANY of the above symptoms, it is possible the patient has severe malaria. The patient's life could be in danger. Urgent treatment is needed at a clinic or hospital to save the patient's life. Do not waste any time in seeking good medical advice.

Remember, malaria is dangerous. But it is preventable through a multi-sectoral effort to address and control the problem by individuals, community, media and other sectors.

PROTECT YOUR FAMILY. HELP THE COMMUNITY

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